A SURVEY OF OVERNIGHT BACKCOUNTRY VISITORS TO DENALI NATIONAL PARK AND PRESERVE

JANE E. SWANSON
MARK E. VANDE KAMP
DARRYLL R. JOHNSON
ROBERT E. MANNING
STEVEN R. LAWSON

Technical Report NPS/CCSOUW/NRTR-2002-04
NPS D-318

CASCADIA FIELD STATION
USGS/BRD/FRESC
COLLEGE OF FOREST RESOURCES
BOX 352100
UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195-2100

The Cascadia Field Station was originally established by the National Park Service in 1970. Known as the Cooperative Park Studies Unit (CPSU) it was and still is located in the College of Forest Resources. In 1997, the CPSU was transferred to the U. S. Geological Survey (USGS) and administered out of the Biological Resources Division (BRD) of the Forest and Rangeland Ecosystem Science Center (FRESC) located in Corvallis, Oregon. The mission of FRESC and that of the Field Station is to work with others to provide the scientific understanding and technologies needed to support the sound management and conservation of our Nation's biological resources. Field Station programs are developed to provide the appropriate depth and breadth of objective science in order to meet the information needs of resource managers who encounter complex environmental problems driven by myriad biological, physical, social, and economic forces.

The National Park Service disseminates results of biological, physical, or social science research through the Natural Resources Technical Report Series. Natural resources inventories and monitoring activities, scientific literature reviews, bibliographies, and proceedings of technical workshops or conferences are also disseminated through this series. Documents in this series usually contain information of a preliminary nature and are prepared primarily for internal use within the National Park Service.

Mention of trade names or commercial products does not constitute endorsement or recommendation for use by the U. S. Geological Survey or the National Park Service. The contents of the report do not necessarily reflect the views and policies of the National Park Service or of the U.S. Geological Survey.

Copies are available from the following:

Technical Information Center
Denver Service Center
National Park Service
P. O. Box 25287
Denver, CO 80225-0287
303-969-2130

A SURVEY OF OVERNIGHT BACKCOUNTRY VISITORS TO DENALI NATIONAL PARK AND PRESERVE

JANE E. SWANSON
MARK E. VANDE KAMP
DARRYLL R. JOHNSON

Technical Report NPS/CCSOUW/NRTR-2002-04
NPS D-318

CASCADIA FIELD STATION
USGS/BRD/FRESC
COLLEGE OF FOREST RESOURCES
BOX 352100
UNIVERSITY OF WASHINGTON
SEATTLE, WASHINGTON 98195-2100

April 2002

Cooperative Agreement No. 1443-CA-9910-00-077
National Park Service and University of Washington

This research was supported by Denali National Park and Preserve and the Forest and Rangeland Ecosystem Science Center, Biological Research Division, U.S. Geological Survey.

CONTENTS

ACKNOWLEDGMENTS

Thank you to the survey field crew: Scott Bates, Steve Lawson, and Amy Lawson. Other Field Station employees who contributed substantially to the success of this project include Brett Baumann, Brian Zwiebel, and Eden Epstein.

PREFACE

This document reports the results from a survey of visitors camped overnight in the backcountry of Denali National Park and Preserve in the summer of 2000. The pre-trip interview, diaries, post-trip interview, and the mail questionnaire used in this study are included in Appendices A through E. The questions used in the survey are included in the text of this report. However, readers may benefit by reviewing the survey materials in order to familiarize themselves with the survey items and the format in which they were originally presented. It is anticipated that this report will be used primarily as a reference document and, therefore, depending on each reader's objective, this report may be used in very different ways. However, any reader not familiar with statistical analysis of survey data is encouraged to refer to Appendix F, "How To Use This Report."

I. Introduction

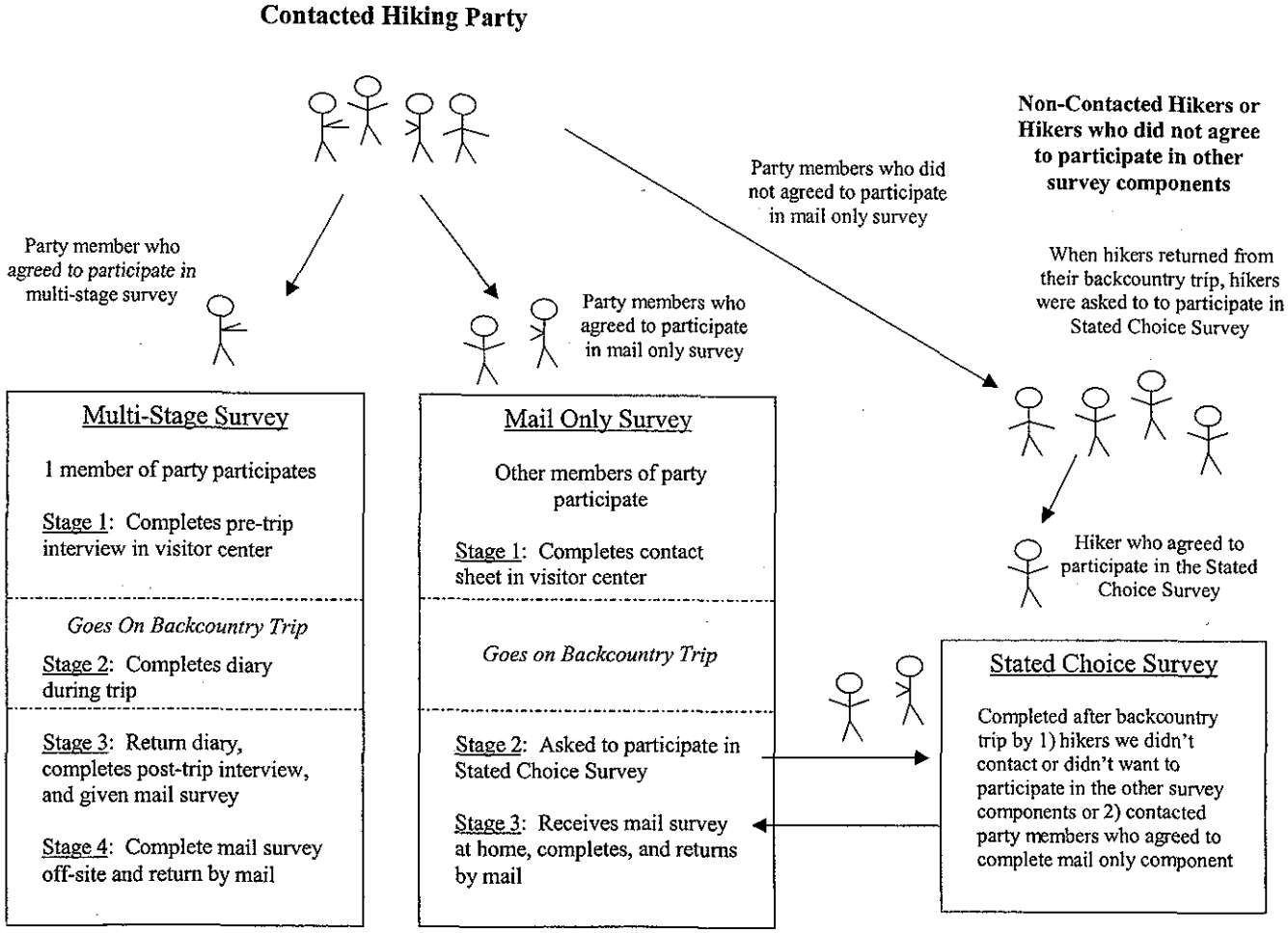
Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

The Denali 2000 Backpacker Survey (DBS) was administered by the USGS, Biological Resources Division, Forest and Rangeland Ecosystem Science Center, Cascadia Field Station. The study was proposed and funded by Denali National Park and Preserve.

The overall objective of the DBS was to collect social information beneficial to wilderness planning and management in Denali National Park and Preserve (DENA). Specific objectives were 1) to assess the characteristics of visitors who take overnight backpacking trips in DENA, including their motivations for these trips; 2) to assess backpackers' encounters with other hikers and park rangers and the impact of these encounters on the quality of recreation experiences; 3) to determine any changes over time in the types of visitors who backpack overnight, their motivations, and their encounters with other hikers by comparing these data with those collected by Womble in 1978; 4) to assess backpackers' awareness of and support for selected management policies and regulations; 5) to assess the importance of various aspects of the backpacking experience, including the relative importance of selected factors through stated choice analysis ; 6) to assess backpackers' encounters with aircraft and the impact of these encounters; and 7) to conduct a field experiment to examine whether providing information about aircraft changes the impact of aircraft on backpackers' trip experiences.

To achieve these objectives, three different components were employed: a multi-stage survey, a mail-only survey, and a stated-choice survey (see Figure 1.1). This introduction describes the methods for the survey portions of the project that includes the field experiment. The methods for the stated-choice survey portion are described in Chapter X. The comparison of the 2000 data with Womble's 1978 data will be presented in a separate companion report.

Figure 1.1. Overview of Study Design



Survey Design and Questionnaire Development

The multi-stage survey component used four different surveys. The use of a pre-trip interview was partly motivated by an interest in how hikers' knowledge of, expectations, and preferences about aircraft in DENA compared with hikers' actual experiences. Additionally, use of a pre-trip interview allowed us to examine the effect of information about aircraft on trip experiences by providing half of the hikers with information about aircraft in DENA (the experimental condition) while the remaining half were given no aircraft information (the control condition).

The use of a diary was motivated by the desire to gather information about hikers encounters with aircraft, other hikers, and park rangers. Given the detailed level of information desired concerning encounters, daily recording of experiences was expected to provide more accurate information than asking hikers to recollect their experiences at the end of the trip.

The use of a post-hike interview was motivated by an interest in assessing the impacts of aircraft on hikers' trip experiences before these experiences were forgotten. The timeliness of assessment was particularly important given that we sought to measure the effects of pre-trip information with these measures.

The use of a mail questionnaire for the final set of questions (rather than including them in the on-site post-trip interview) was motivated primarily by the undue burden that would be placed on hikers during the trip if they were asked to answer the necessary number of questions on-site. Many of these questions were taken directly from the Womble 1978 mail survey in order to allow direct comparison.

In early August, the *mail only survey* component was added to the original survey plan in an effort to increase sample size for the mail questionnaire (respondents received the same mail questionnaire as the multi-stage survey respondents) and to make the target population for the mail questionnaire more directly comparable to Womble's 1978 target population. An increase in sample size was necessary because the original plan was based on DENA visitor use data that overestimated wilderness overnight visitation. When reports from the field suggested problems meeting sampling goals, adjustments in

procedures were made to increase sample sizes based on more realistic estimates of the number of hiking parties.

The survey procedures as well as the questionnaires (see Appendices A through E) were produced by the Cascadia Field Station in cooperation with staff at Denali National Park and Preserve and the School of Natural Resources at the University of Vermont. Initial meetings were held in the Fall of 1999 to establish general project objectives. Input from park staff was essential in ensuring that the questionnaires addressed management needs. The draft questionnaires were sent to the Office of Management and Budget for review and approval in May of 2000.

Sampling and Visitor Contact Procedures

There are three populations that are represented by responses to the different questions in the survey. 1) The population for questions asked in the mail survey is *all hikers* over the age of 17 who camped overnight in the backcountry[1], and is limited to hikers entering between July 24, 2000 and September 4, 2000. 2) In the diaries, some questions asked respondents to describe their encounters with other people and aircraft (e.g., how many aircraft did you see?). These reported experiences are believed to be representative of what the hiking party as a whole experienced. The population for these questions is that of *all hiking parties* who camped overnight in the backcountry, and is limited to parties entering between July 24, 2000 and September 4, 2000. 3) The other questions in the diaries were evaluative in nature (e.g., how did you feel about the number of aircraft you saw?), and the questions in the pre-trip and post-trip interviews asked about an individual's knowledge or experiences. Because respondents selected to represent their hiking party were not randomly selected, their responses to these questions cannot a priori be assumed to be representative of all hiking parties nor all hikers. The population for these questions is *respondents selected to represent their hiking party* who are over the age of 17 and camped overnight in the backcountry, and is limited to hiking

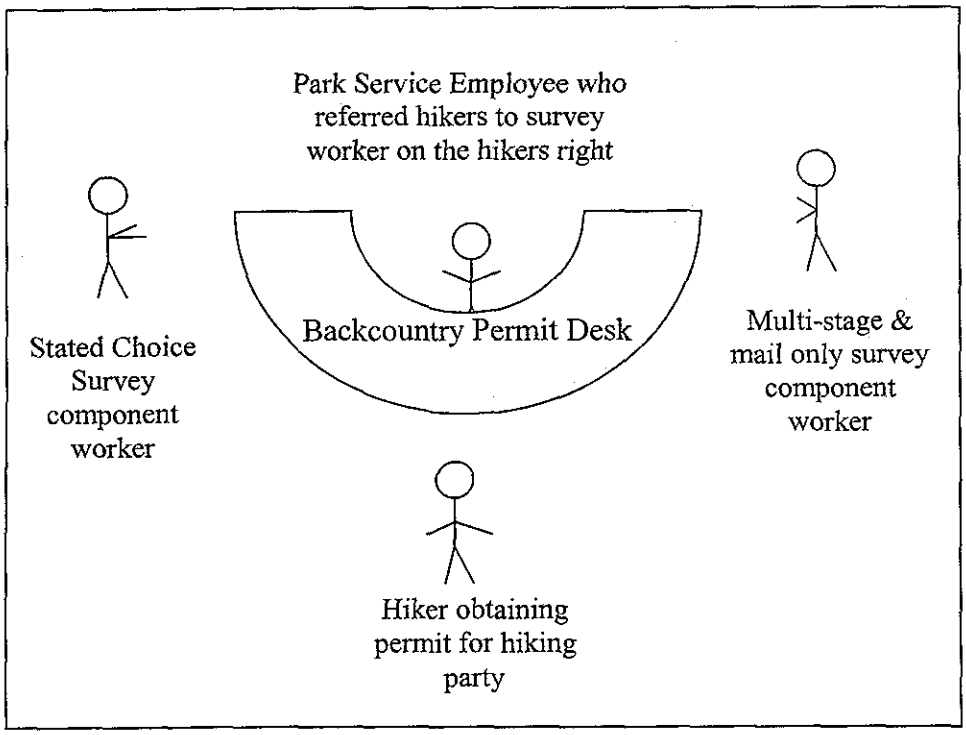
[1] All the backcountry in DENA was legally designated as wilderness in 1980, we are using backcountry to refer to wilderness areas in DENA in an effort to have the language of the report be consistent with the language used in the survey instruments (see Conventions Followed in this Report, page 18, for more detail).

parties entering between July 24, 2000 and September 4, 2000 (see Accuracy of the Sample, pages 13-14).

Visitor Contacts

Park personnel at the backcountry desk in Denali visitor center asked each hiking party who sought a backcountry permit to speak with the survey workers located to the right of the backcountry desk. Survey workers were set up on both sides of the permit desk. To the right of the permit desk were the interviewers for the multi-stage survey, and to the left of the desk were the interviewers for the stated choice survey (see Figure 1.2). People were contacted for the stated choice survey upon their return from the backcountry, which is described below.

Figure 1.2. Layout of Survey Workers in DENA Visitor Center



The survey worker asked one person over the age of 17 from each party to participate in a multi-stage survey of backpackers. People agreeing to participate then completed the pre-trip interview and were given the diary for them to complete during

their trip[2]. The remaining members of the hiking party were asked to participate in a mail only survey. People agreeing to participate in the mail only survey completed a paper and pencil on-site questionnaire that asked for their names, addresses, age, and sex. Within a few weeks, hikers in the mail-only survey component were sent the same mail questionnaire that was used in the multi-stage survey component.

When the hiking party came to the backcountry desk at the conclusion of their trip to return their food canister, park personnel again asked them to speak with the survey workers. At this time, the party member who was participating in the multi-stage survey returned the diary, completed the post-trip interview, and was given the mail questionnaire. The other party members (who had not agreed to participate in any other portion of the study) were asked to participate in the stated-choice experiment. Respondents who returned from the backcountry when the visitor center was closed returned their bear canisters outside in two designated plywood boxes. A drop box for returning diaries was attached to the top of each box with a sign indicating to return diaries here.

Survey contacts were made between approximately 7:00 a.m. and 8:00 p.m., seven days a week. This time period corresponded to the hours that the backcountry desk was open. The goal was to have a near-census of backpacking parties who obtained a backcountry permit participate in the survey. A total of 1026 backcountry permits were issued from July 4, 2001 to September 4, 2001 (see Table 1.1). Of those 1026 backpacking parties, 98 parties (9.5%) were ineligible to participate because they were visitors who lived locally and had already participated (n = 39) or parties who had faxed permits from Kantishna (n = 59). Of the remaining 928 parties, 605 parties were contacted and asked to participate in the multi-stage survey component. This constitutes 59.0 percent of all hiking parties and 65.2 percent of eligible hiking parties.

[2] The task of obtaining a permit was often left to one member of a party and other members were not readily available for survey participation. This resulted in some self-selection of survey respondents. The degree of deviation from a random sample and the resulting potential for survey bias are unknown.

Table 1.1. Summary of Total Hiking Permits Issued

1026 total permits issued		
98 parties ineligible for survey	39 local repeat visitors	
	59 faxed permits from Kantishna	
928 permits issued to eligible hiking parties		
323 parties not contacted	207 non-local visitors	
	116 local visitors	
605 parties contacted	554 agreed to participate	507 Stayed in BC as planned
		47 Did not stay in BC as planned
	51 refused to participate	

Of the 605 hiking parties contacted, 554 parties (91.6%) agreed to participate in the multi-stage survey component. A total of 47 parties did not end up camping in the backcountry as originally planned and thus, were excluded from the study. A total of 507 backpackers completed the pre-trip interview. An additional 197 names and addresses were collected on-site for the mail-only survey.

Possible Reasons for Not Contacting Hiking Parties

Many non-contacted parties might more accurately be classified as refusals because the park staff at the permit desk asked hikers to talk with the survey worker. There was no easy way, however, to record how many hikers simply avoided the survey worker at that time. It should also be noted that the number of permits doesn't map perfectly onto the number of hiking parties. Survey workers found that what occasionally appeared to be a cohesive hiking party was actually two hiking parties with two permits as the people were traveling together for a couple of days and then splitting up. Once this possibility came to our attention, each party obtaining a permit was a separate participant in the multi-stage survey. Other possible reasons for not contacting these parties include: 1) hikers often came in batches and the survey workers were unable to contact all the hiking parties in a batch; 2) hikers who came through when the survey worker was on a short break; 3) it took some time initially for the park staff and the survey workers to become familiar with the routine for contacting hiking parties (more parties were missed

early on than later in the survey period); and 4) the visitors were foreign and did not have a strong enough command of the English language to complete the survey (our sample contained 13.3 percent foreign hiking parties compared to the 21.7 percent of foreign hiking parties issued permits—see page 13 for more detail). There are no known theoretical reasons why the people that we missed for these reasons would differ systematically from those we were able to contact.

Visitors who live locally (i.e., local parties) often take multiple backcountry trips, and therefore, there may be additional reasons why they were not contacted. Local parties (36.0% of non-contacted parties) may not have been contacted because 1) the park's streamlined process of obtaining a permit allows locals to obtain a permit in a couple of minutes, and thus when survey workers took a short break, some local parties may have been missed; 2) local parties may have participated in the conjoint analysis component of the survey during a prior trip, and therefore, when they said they had already participated, survey workers did not pursue them for the multi-stage survey component; and 3) some locals were consistently in too much of a hurry to stop and speak with the survey workers when they came in to get their permit.

It is also likely that we are considerably overestimating the number of non-contacted local parties. When local parties took more than one trip, the subsequent trips (and permits) were considered ineligible rather than non-contacted. We assessed the number of ineligible local parties due to repeat visitation by comparing our data with the park's database, and when the same person obtained a permit on more than one occasion the subsequent visit was considered ineligible. Although many local groups consisted of the same group of people, different people would obtain the permit on each trip making it appear to be a first time visit when actually it was a repeat visit.

Administration of Mailings

Multi-stage survey component. All multi-stage survey participants received a thank-you/reminder letter about 10 days after they completed the post-trip interview. In an effort to increase response to all parts of the multi-stage survey component, all participants who did not return any stage of this component were sent follow-up mailings. The specific content and timing of the mailings depended on which stages were

outstanding and are outlined in Table 1.2 below. Table 1.3 below summarizes the final number of people who completed each stage of this component. Response rates for each stage were calculated using the number of people who were eligible and agreed to participate in the pre-trip interview (507 participants) as the base.

Table 1.2. Summary of Mailings for Mulit-Stage Survey Component

Stages that Participant completed prior to initial mailing:	Timing and Content of Mailings			
	Send Q's not responded to	Send thank you/reminder	Send 2nd set of Q's with reminder	Send 3rd set of Q's with reminder
Returned diary, did post-trip interview, and received mail Q		10 days after post-hike interview	↑ 14 days after thank-you/ reminder ↓	↑ 14 days after 2nd set ↓
Returned diary, but did not do post-trip or receive mail Q	As soon as noted	↑ 7 days after 1st set was mailed ↓		
Only did pre-trip	5 days after expected return date			
Mail-only	As soon as information received in Seattle			

Table 1.3. Summary of Returned Instruments in Multi-Stage Survey Component

	Survey Stage			
	Pre-trip	Diary	Post-trip	Mail
Pre-trip Only	92			
Pre- trip & Diary	26	26		
Pre- trip & Post-test	4		4	
Pre- trip & Mail	2			2
Pre- trip, Diary, & Post-test	87	87	87	
Pre- trip, Diary, & Mail	4	4		4
Pre- trip, Post- trip, & Mail	10		10	10
All Four stages[1]	282	282	282	282
Totals by Stage	507	399	383	298
Response Rate	--	78.7%	75.5%	58.8%

[1]55.6% of respondents completed all four stages of this component

Mail-only survey component. The names from the contact sheets were compiled into a database that served as the basis for administering the mailings for the mail only component. All people who provided a name and address were mailed a questionnaire accompanied by a cover letter from the Cascadia Field Station. Respondents were instructed to complete the questionnaire and return it by mail in the postage-paid envelopes. As a follow-up, all respondents were sent a thank you/reminder letter about one week after they received the questionnaire. Non-respondents received a second reminder letter and an additional copy of the questionnaire about 14 days after the first reminder. For those who did not respond to the second reminder, a third letter and yet another copy of the questionnaire were sent about 14 days after the second reminder. Of the 197 questionnaires mailed, eight were returned due to incorrect or out-of-date addresses and two were returned by people who participated in the multi-survey component (these were excluded from this component). The final response rate was 59.4 percent, with 111 of 187 questionnaires completed and entered in the data file. This response rate is lower than expected or desired, but is comparable to the return rate of the mail questionnaire in the multi-survey component.

Possible Explanations for Lower than Expected Response Rates

Response rates for all instruments were lower than what was expected based on previous experience with NPS backcountry users. Our monitoring of response rates brought the lower response rates to our attention when there was time to examine and modify our procedures. The following procedures were adopted to increase the return of diaries: 1) stronger verbal appeals emphasizing the importance of returning the diaries were made during the pre-trip interview, 2) labels were placed on the front of the diary emphasizing the importance of its return, 3) the backcountry desk staff were enlisted to ask every returning hiker if they had a diary to return, and 4) follow-up mailings of individuals not returning a diary asked them to either return their original or to complete the enclosed one from memory.

When the low response rates to the mail questionnaire were first detected, a limited number of respondents were called to ascertain whether the materials had been received timely, if the respondent lived at the address, if the packet was complete

including return postage, and whether the instructions were confusing. These calls along with review of returned questionnaires indicated that many respondents were difficult to contact by mail either because they were on extended trips or they provided a mailing address at which they were not currently living (e.g., college-age students who provided their parents address). As noted earlier, local Alaskan employees were disproportionately responsible for the low response rates. Many of these people are summer concession employees, and they may have provided a permanent address rather than their local address. Although the mailings were delivered to the address provided, it may be that the respondent did not receive the follow-up mailings until after considerable delay, if at all. No other indications of problems with the mailing procedures were noted.

Two other minor procedural problems may have limited response slightly. First, it was possible that respondents who changed their plans and did not stay in the overnight in the backcountry did not respond as they knew they were no longer eligible to participate. This possibility came to our attention when some respondents returned their survey with a note indicating that they never stayed overnight in the backcountry as they originally planned, often due to bad weather or more rugged than expected conditions. A minor change to the cover letters/reminders asked people to return the materials with a "did not go" message if they had decided not to use their backcountry permit. Second, it may have been unwise to use the same cover art and booklet shape for both the diary and mail questionnaire. Although different color paper was used and cover titles differed, some hikers who were sent the mail questionnaire may have mistaken it for a second copy of the diary and assumed they had already completed it. This mistake was probably uncommon because it could only occur when a) respondents did not read the title and/or notice the different color paper, b) the respondents did not open the mail questionnaire, and c) they forgot that the interviewer had told them about the mail questionnaire and that they consented to complete it.

One other reason may explain the low response for the mail-only component. The contact sheet asked for everyone in the party's name and address (excluding the person competing the multi-stage survey component). It may be that when some hikers weren't physically present to give their information, another hiker in their party supplied it. As

there was no way to identify these people, we may be overstating our non-response rate and understating our initial refusal rate.

Administration of Aircraft Information Experiment

Upon consenting to participate in the multi-survey component, individuals were assigned to either the experimental (information) or control (no information) condition for the aircraft information field experiment. During any one half-day segment, all individuals agreeing to participate were assigned to one condition. The assignment of information and control conditions to half-day segments was such that an equal number of morning and afternoon segments were assigned to each condition. This procedure resulted in 47.5 percent of individuals being assigned to the experimental condition and 52.5 percent of individuals being assigned to the control condition.

People in the information condition answered some pre-trip questions about aircraft and were told of the presence of aircraft in DENA. These people were then given a trip diary that asked them to record information about their encounters with aircraft and with other hikers (see Appendix C). People in the control condition did not complete the pre-trip questions nor were they told about aircraft in DENA. The trip diary they were given asked them to record information about encounters with other hikers and park rangers (see Appendix D). Upon the completion of their backcountry trip, people in both conditions completed the same post-trip interview and were given the same mail questionnaire.

Statistical Considerations

Readers not familiar with statistical analyses of survey data are encouraged to refer to Appendix F, "How to Use this Report". *Consistent with convention, statistical significance was set at the* ***.05 level*** *for analyses included in this report.* Statistical tests with *p*-values equal to or less than .05 are interpreted as indicating effects that are reliable or real (observed effects have a 5 percent or less probability of being due to chance alone). Although the analyses highlight statistically significant effects, they are unable to reveal whether effects have important practical implications. Some effects that fall just short of the .05 significance level may have large practical implications while other

effects with high statistical significance may have no practical implications. Thus, it is important to consider both the statistical significance and the practical implications of these data.

Accuracy of the Sample

As noted earlier, there are three populations that are represented by responses to the different questions in the survey (see page 4 for more detail). 1) Responses to questions in the mail questionnaire represent all hikers who obtained a permit to camp overnight in the backcountry. 2) Responses to questions in the diary that are descriptive in nature represent all hiking parties. 3) Responses to the questions in the pre-trip and post-trip interviews and to questions in the diaries that are evaluative in nature represent respondents selected to represent their hiking party.

The park's database of permit information was used to assess how well our sample of 65.2 percent of eligible hiking parties represented the population of all hiking parties who obtained a permit. Information about residence was provided in the park database for the person who obtained the permit, and was used as a basis for assessing our sample. Local Alaskan hiking parties obtained 28.6 percent of permits issued during the sample period, but were only 14.3 percent of our sample. This difference was because hiking parties could only participate once in the study, and local Alaska hiking parties were the most likely to take multiple backcountry trips.

After eliminating local Alaska hiking parties from the analysis, it was found that a greater proportion of permits were issued to foreign hiking parties than was represented in our sample (21.7% vs. 13.3%, respectively). This difference reflects that only foreign hiking parties with a strong enough command of the English language to complete the survey instruments were contacted and asked to participate.

When both foreign hiking parties and local Alaskan hiking parties were eliminated from the analysis, the percentage of non-local Alaskan hiking parties contacted was 13.0 percent compared to 16.9 percent who had obtained permits (the percentage of non-Alaskan US hiking parties contacted vs. obtained permits was 87.0% vs. 83.1%). These findings suggest that our sample of hiking parties does not differ in unexpected ways on these variables from the population of all hiking parties obtaining permits. If we

make the assumption that party members included in the park database are representative of all backpackers in terms of where they live (i.e., residence), then it is possible to extend this analysis of the sample of all hiking parties to all hikers. We can therefore conclude that our sample of all hikers also does not differ in unexpected ways on these variables from the intended population.

Respondents selected to represent their hiking party were not randomly selected from the party and therefore, it is possible that this sample does not represent all hikers. However, we compared the responses to the mail survey questions for respondents selected to represent their hiking party in the multi-survey component with those of the remaining party members who participate in the mail only survey and found no differences. Therefore, it is unlikely that our respondents selected to represent their hiking party differ from all hikers on the remaining survey questions.

Local Alaska hiking parties are under-represented in the sample of hiking parties contacted as well as they are less likely to respond to the various survey components (i.e., potential non-response bias). For these reasons, respondents' residence was examined for all research findings, and when local Alaska residents differed from other respondents, the data are presented separately for each group. Subject to the limitations stated previously, we generally believe that the data excluding local Alaska residents are representative of non-local hiking parties and non-local hikers who camped overnight in DENA during the time of the survey. Because of the small number of local Alaska hiking parties included in the sample and the high non-response rates for this group, it is unclear whether our sample accurately represents all local Alaska hiking parties or all local Alaska hikers. Therefore, caution should be used when interpreting data for local Alaskans.

Assuming a random sample and questions of the yes/no type in which the true occurrences of these values in the population are 50%/50%, the data from the smallest sample in this survey (the 383 respondents completing the post-trip interview) can be generalized to the population of backpackers who camped overnight in DENA with a 95 percent assurance that the obtained or observed percentages to any item will vary no more

than ± 5.0 percent. For the largest sample (the 507 respondents to the pre-trip interview) the same confidence interval is ± 4.4 percent.

Limitations

The DBS has several general limitations that should be kept in mind when interpreting the data. 1) In all surveys, it is assumed that respondents provide accurate and honest answers to the questions asked. 2) The data represent visitor attitudes and opinions at a particular point in time (i.e., the time of the survey) and changes can occur at any time. 3) Statistical inferences can only be made for a subset of DENA visitors who camped overnight in the backcountry. For data obtained in the mail questionnaire, that subset is all hikers who camped overnight in the backcountry during the survey period. For descriptive data obtained in the diaries, that subset is all hiking parties. For evaluative data obtained in the diaries and for data obtained in the pre-trip and post-trip interviews, that subset is respondents selected to represent their hiking party. 4) Because hiking parties rarely completed the permit process as a group (either before or after their trip), the data for the pre-trip and post-trip interviews and the diary most likely over-represent trip planners and under-represent large parties.[3] In addition, there are other limitations noted in the body of the report that are due to the manner in which individual questions were interpreted or that are specific to a particular aspect of the survey (i.e., aircraft information experiment, conjoint analyses). Finally, there are limitations that revolve around the issue of non-response (i.e., possible bias in the sample due to differences between the visitors who completed the questionnaires and those who didn't). Potential limitations associated with non-response are discussed below.

Non-response—Multi-stage survey component. It is mathematically possible that the people who responded to a stage of the survey differed sufficiently from the people who did not respond that the sample data do not accurately represent the population. A variety of data from the pre-trip interview provide an opportunity for the use of statistical tests to search for possible differences between respondents and non-

[3] The addition of the mail-only component (in order to get a near-census of all backpackers) not only made the target population for the mail survey comparable to Womble's 1978 target population, it addressed concerns about the representativeness of the sample for the mail questionnaire.

respondents. Specifically, possible differences were assessed using Chi-square tests for independence that determined whether response rates were independent of a particular visitor characteristic (using a .05 significance level). The visitor characteristics that were used in assessing possible non-response bias were gender, whether the respondent was a local summer employee, and whether respondents were in the experimental or control condition (which version of the pre-trip interview and diary they received).

Given that people may have responded to some but not other of the instruments, non-response bias was assessed for each survey instrument: 1) diary, 2) post-trip interview, and 3) mail survey. Additionally, non-response bias was assessed for people who completed all four components of the multi-stage survey component and those who did not.

For the visitor characteristics listed above, statistically significant differences in response rates were found for whether or not respondents were local summer employees. Local summer employees (compared to the other respondents) were less likely to 1) return the diary (54.7% vs. 82.8% response rate), $\chi^2(1, n = 504) = 29.91, p < .001$; 2) complete the post-trip interview (53.3% vs. 79.3% response rate), $\chi^2(1, n = 504) = 23.12$, $p < .001$; and 3) return the mail questionnaire (41.3% vs. 61.8% response rate), $\chi^2(1, n = 504) = 11.00, p = .001$. Consistent with the findings for the individual instruments, local summer employees (compared to other respondents) were also less likely to complete all four instruments (33.3% vs. 59.4% response rate), $\chi^2(1, n = 504) = 17.62, p < .001$.

The results of the non-response analysis clearly showed local summer employees were less likely to respond to the subsequent instruments of the multi-stage survey than were other respondents. Because it was also probable that local summer employees would differ from other respondents in their experiences and knowledge of DENA, the impact of visitors' residence was examined for each research finding in this report. Specifically, respondents were divided into three residence categories that correspond to decreasing experience and knowledge of DENA: 1) Local Alaska residents (86.2% were the local summer employees), 2) Non-local Alaska residents, and 3) Non-Alaskan residents (included foreign respondents as well). Whenever significant effects of

residence were observed, they are reported. When residence is not discussed, readers can assume that analyses found no significant effect of residence.

Non-response—Mail only component. Non-response bias was also examined for the mail only component. Three visitor characteristics collected as part of the contact sheet were used to search for statistical differences between respondents and non-respondents. Specifically, possible differences were assessed using Chi-square tests for independence that determined whether response rates were independent of a particular visitor characteristic (using a .05 significance level). These characteristics were age, gender, and residence (local Alaska resident, non-local Alaska resident, and non-Alaskan resident).

For the visitor characteristics listed above, no statistically significant differences in response rate were found. The small number of local Alaska residents (3 out of 197) in this sample did not provide a sufficient base for which to statistically test if they differed from the other two groups. Anecdotally, none of the three local Alaska residents returned their mail questionnaire. The results of the non-response analysis provided no indication of possible biases (based on assessed variables) between respondents and non-respondents.

Conventions Followed in This Report

As mentioned previously, there were 4 instruments in the multi-stage survey component (pre-trip interview, diary, post-trip interview, and mail questionnaire). These questionnaires are included in this report (see Appendices A through E), and it is recommended that they be reviewed before reading the body of this report. In the body of this report, each question is presented as it appeared on the questionnaire, and it is followed by corresponding graphs, tables, or analyses. The specific questionnaire and question used to collect the data reported in each chart are noted in the chart titles. The number of respondents (n) whose data are represented in each chart is also reported, generally at the bottom of the chart. The maximum number of respondents for each stage of the survey are: 1) 507 respondents for the pre-trip, 2) 399 respondents for the diary, 3) 383 respondents for the post-trip interview, and 4) 409 (298 + 111 mail only) respondents for the mail questionnaire. When a chart reports data for a subset of respondents (*c.f.*

Figure 4.3: Behaviors Engaged in to Avoid Other Parties), a note describes the sub-sample included in the chart.

Because of the likelihood of non-response bias due to low response rates among local Alaska residents, we looked for differences due to respondents' residence (local Alaskan residents, non-local Alasakan residents, and non-Alaskan residents). When significant effects of respondents' residence were found, they are reported. Additionally, more complex analyses were done both with and without local Alaskan residents and the impact of local Alaskan residents reported. When residence is not discussed, readers can assume that analyses found no significant effects of this variable. When residence differences exist, they are always reported because the overall sample data may misrepresent both the visitors who are local Alaskan residents and those who are not.

Although all backcountry areas in DENA were legally designated as wilderness in 1980, we are using the term backcountry to refer to wilderness areas in DENA in an effort to have the language of the report be consistent with the language used in the survey instruments. The use of backcountry in the survey instruments occurred because we replicated the Womble, 1978 study (where backcountry was the technically correct term). Because most park users use backcountry and wilderness interchangeably in everyday language, the use of the term backcountry to refer to wilderness should not have affected respondent's ability to complete the survey instruments nor lead to any bias in the findings of this study.

Highlights are presented at the beginning of each chapter. A bulleted list is used when the chapter reports primarily descriptive data. When the chapter reports more detailed analyses, each highlight will contain a summary statement followed by additional explanations and/or implications. Readers are encouraged to review the supporting figures or analyses referenced in the highlights.

Missing data for up to 10 percent of respondents to a particular question are generally not considered likely to alter the interpretation of that question. Throughout this report, few questions had more than 10 percent missing data. Exceptions are noted in the text and charts.

It is neither possible nor desirable that this report describes all possible analyses of the data collected by the survey, or even all analyses that are potentially of interest to MORA managers. However, some analyses that may be of interest are briefly noted throughout this report, and described as potential future analyses. Park managers and planners are encouraged to think creatively about potential analyses of the data.

II. Visitor Profile

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey hikers were asked a variety of demographic questions that are used here to describe, or provide a profile of, Denali backpackers who camped overnight in the backcountry. With the exception of two questions, these questions were asked in the mail survey component, and therefore, represent all hikers who camped overnight in the Denali wilderness. Hikers were asked in the pre-trip interview whether they were a summer concession employee and therefore, these data represent respondents selected to represent their hiking party who camped overnight in the Denali wilderness. Residence information was collected in the mail questionnaire and the pre-trip interview as well as included in the park's database. All of these pieces of information were used to determine hikers' residence as described later in this chapter.

Highlights

- Local Alaskan residents are under-represented in our sample (see Introduction for reasons & limitations). The percentage of local Alaskan *hiking parties* obtaining permits per the Park's data was 28.6 percent while the percentage of local Alaskan *hiking parties* participating in our study was 14.3 percent. The percentage of local Alaskan *hikers* participating in our study was 12.0 percent.

- Two-thirds of backpackers to DENA were non-Alaskan US residents (see Figure 2.1).

- Hikers' age depended on hikers' residence (see Figure 2.4). Local Alaskan hikers were on average the youngest group with an average age of 25.4 years, while non-local Alaskans (M = 31.1) and non-Alaskans (M = 29.8) were about five years older.

- Two-thirds (66.3%) of overnight backcountry hikers in DENA are male (see Figure 2.2), and 82.7 percent of hikers reported that they were Caucasian (see Figure 2.5).

- Over three-quarters (76.2%) of overnight backcountry hikers have at least a college degree (see Figure 2.7). Local-Alaskans however have completed on average fewer years of school (M = 15.3) than non-local Alaskans (M = 16.2) or non-Alaskans (M = 16.7). Figure 2.4 and Figure 2.8 are consistent with the knowledge that local-Alaskans are more likely to be college-aged students working at DENA for the summer.

- Most overnight backcountry hikers to DENA are employed (60.0%) or students (26.7%; see Figure 2.9). Few hikers are retired (1.0%).

- Alaskans are more likely to make multiple trips to DENA in the past three years than are non-Alaskans (see Figure 2.12). Although almost three-fourths of overnight hikers to DENA reported that this trip was their only trip to DENA in the past three

years, hikers from Alaska (local and non-local) had made significantly more trips to DENA in the past three years (M = 11.4 and M = 15.4, respectively) than non-Alaskan hikers (M = 1.5). Moreover, review of Figure 2.12 indicates that for 81.4 percent of non-Alaskans this trip was their only trip to DENA in the past three years and that there is a subset of Alaskans who made a relatively large number of visits in the past three years.

- Although 77.0 percent of backpackers have been issued only one backcountry permit in their lifetime (see Figure 2.13), the number of permits issued to a hiker varied by hiker's residence. Non-Alaskans have been issued fewer backcountry permits in their lifetime than local and non-local Alaskan hikers (M = 7.8 and M = 5.4, respectively) with 83.2 percent of non-Alaskans having been issued only one permit in their lifetime(see Figure 2.14).

II. Visitor Profile

Place of Residence

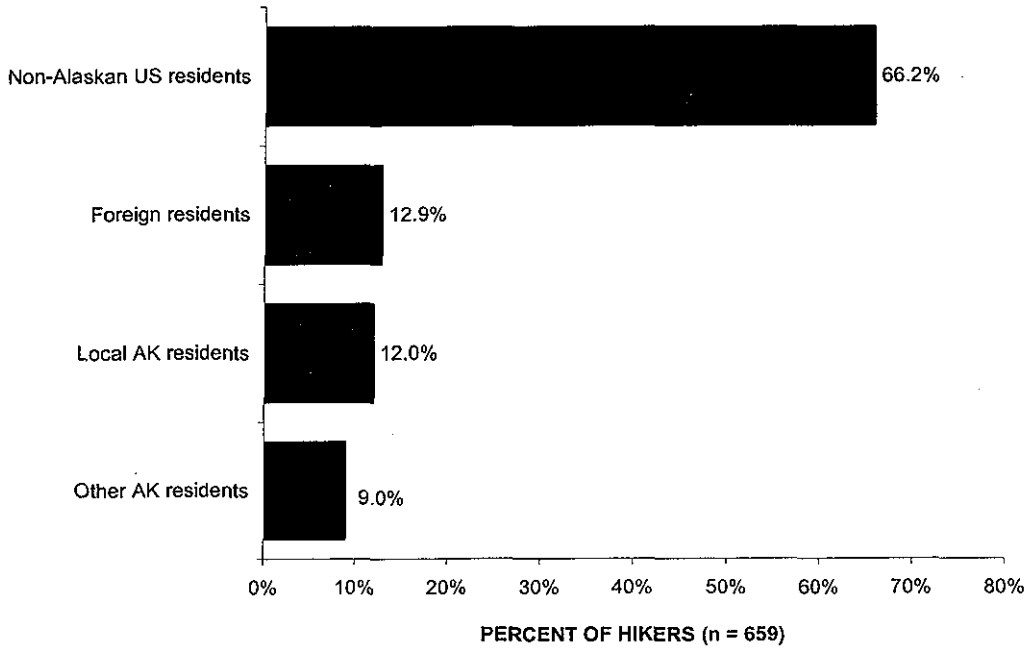
Mail Survey

35.	What is your home Zip code? (Enter country if you reside outside the United States.)
	_____

Hikers were classified into four residence categories based on the following rules. People were assigned to "local Alaskan resident" if 1) they indicated that they were a summer employee, or 2) if they provided a zip code during the contact interview that corresponded to the neighboring towns of Denali Park, Healy, or Cantwell. People who provided an Alaskan zip code during the contact interview other than those above were designated to be "non-local Alaskan residents". The remaining people were designated as "non-Alaskan US residents" or "foreign residents" depending on their response during the contact interview. If people did not provide zip code information during the contact interview, people were classified based on the zip code they provided in the mail questionnaire using the same rules as stated above. If zip code information was missing from both the contact interview and the mail survey (n=77), then zip codes provided in the park permit database were used in conjunction with the rules stated above.

In the analyses examining the effect of respondent's residence, "non-Alaskan US residents" and "foreign residents" were combined into the group "non-Alaskan hikers".

FIGURE 2.1: Pre-trip Interview, Mail Survey, & Park Database
RESIDENCE LOCATION OF DENALI BACKPACKER SURVEY HIKERS



Note: Local Alaskan residents are under-represented in our sample. The percentage of local Alaskan *hiking parties* obtaining permits per the Park's data was 28.6 percent. The percentage of local Alaskan *hiking parties* participating in our study was 14.3 percent and the percentage of local Alaskan *hikers* participating in our study was 12.0 percent.

Age and Gender

Mail Survey

31. Are you: (Circle one number.)

1 FEMALE
2 MALE

32. What year were you born?

19 __ __

FIGURE 2.2: Mail Survey, Q-31
GENDER OF DENA OVERNIGHT BACKCOUNTRY HIKERS

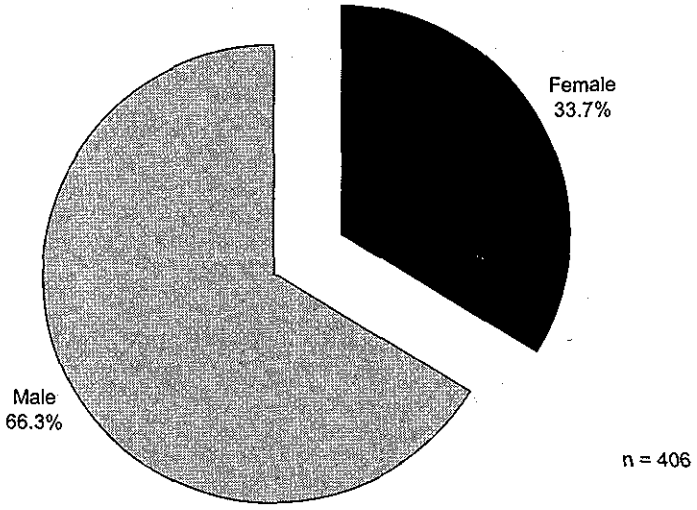
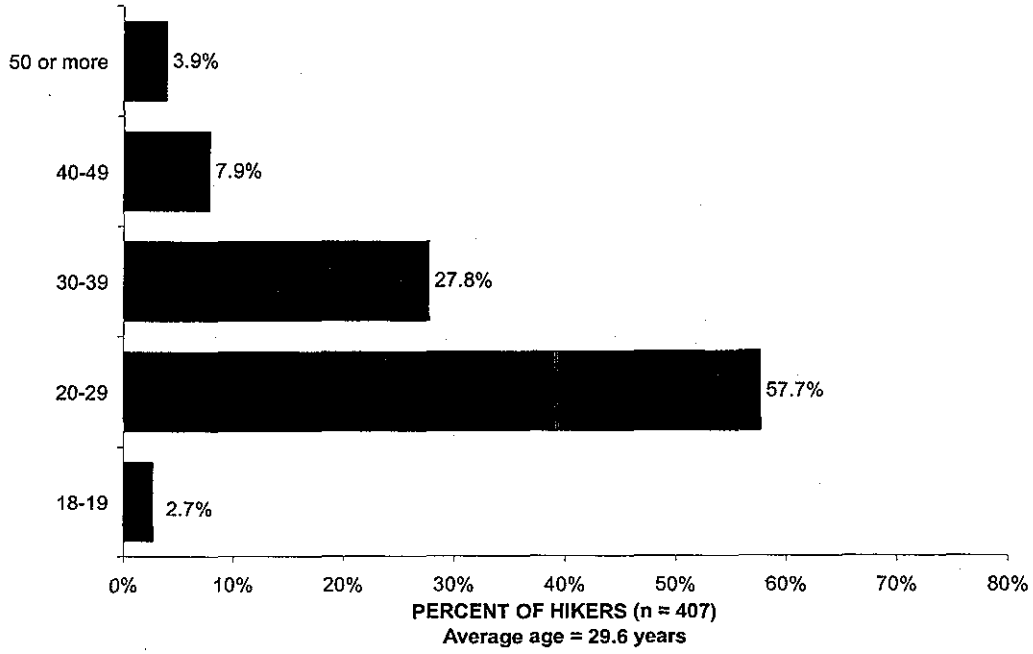


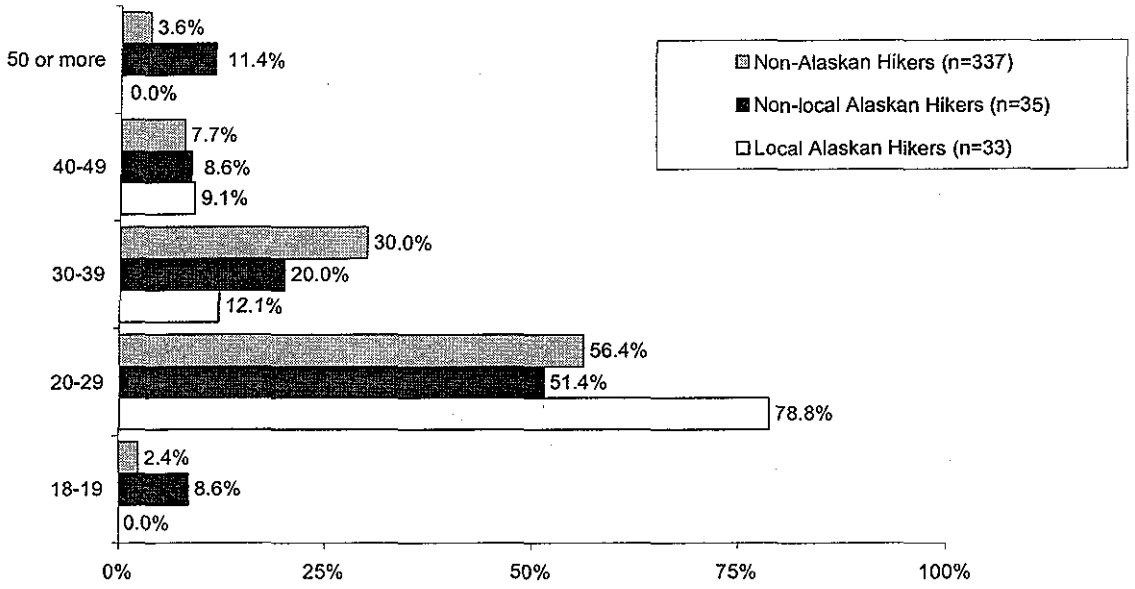
FIGURE 2.3: Mail Survey, Q-32
AGE OF DENA OVERNIGHT BACKCOUNTRY HIKERS



Hikers' age varied significantly by residence, $F(2, 402) = 4.97$, $p = .007$. Post hoc Tukey tests revealed that local Alaskan hikers were, on average, younger ($M = 25.4$) than non-local Alaskan hikers ($M = 31.1$), $p = .013$, or non-Alaskan hikers ($M = 29.8$), $p = .009$. The difference in age of non-local Alaskan hikers and non-Alaskan hikers, however did not differ significantly, $p = .669$. As can be seen in Figure 2.4, 78.8 percent of local Alaskan hikers were between age 20 and 29 compared to approximately half of the other hikers. These findings are consistent with many of the local Alaskan hikers being summer employees—most of which are college students.

These findings exemplify how our sample is biased when the data for all groups are aggregated together when the residence groups differ significantly. If a single average of the whole sample is desired, then the data can be weighted to correct for this bias. Because it is unclear how representative our sample of local Alaskan hikers is of all local Alaskan hikers, we have chosen instead to show the data for the different groups when the groups differ significantly.

FIGURE 2.4: Mail Survey Q-32
AGE OF HIKERS BY RESIDENCE



Average age: Non-Alaskan = 29.8 , Non-local Alaskan = 31.1, Local Alaskan = 25.4

Race

Mail Survey

36. In what ethnicity and race would you place yourself? *(Circle your answers.)*

Ethnicity:
1 HISPANIC OR LATINO
2 NOT HISPANIC OR LATINO

Race:
1 AMERICAN INDIAN OR ALASKA NATIVE
2 ASIAN
3 BLACK OR AFRICAN AMERICAN
4 HISPANIC OR LATINO
5 NATIVE HAWAIIAN OR OTHER PACIFIC ISLANDER
6 WHITE
7 DO NOT WISH TO ANSWER

***FIGURE 2.5:* Mail Survey, Q-36**
RACE OF DENA OVERNIGHT BACKCOUNTRY HIKERS

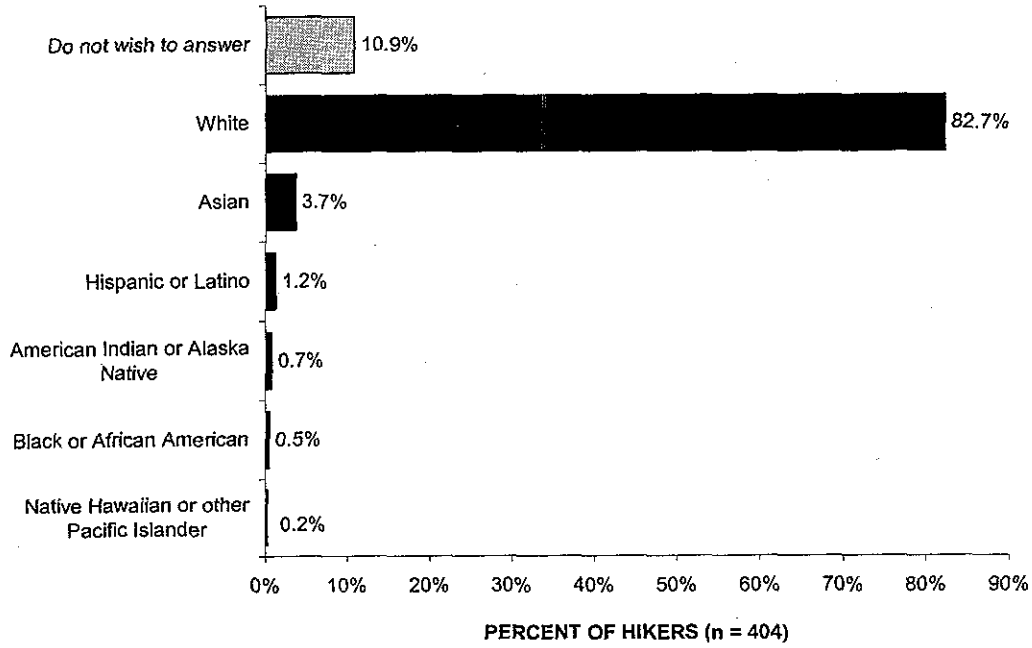
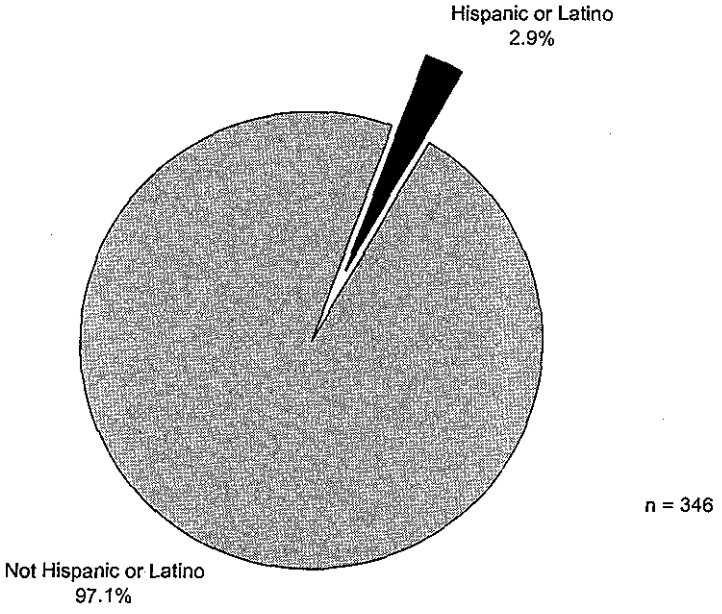


FIGURE 2.6: Mail Survey, Q-36
PERCENTAGE OF HIKERS INDICATING HISPANIC OR LATINO ETHNICITY



Education

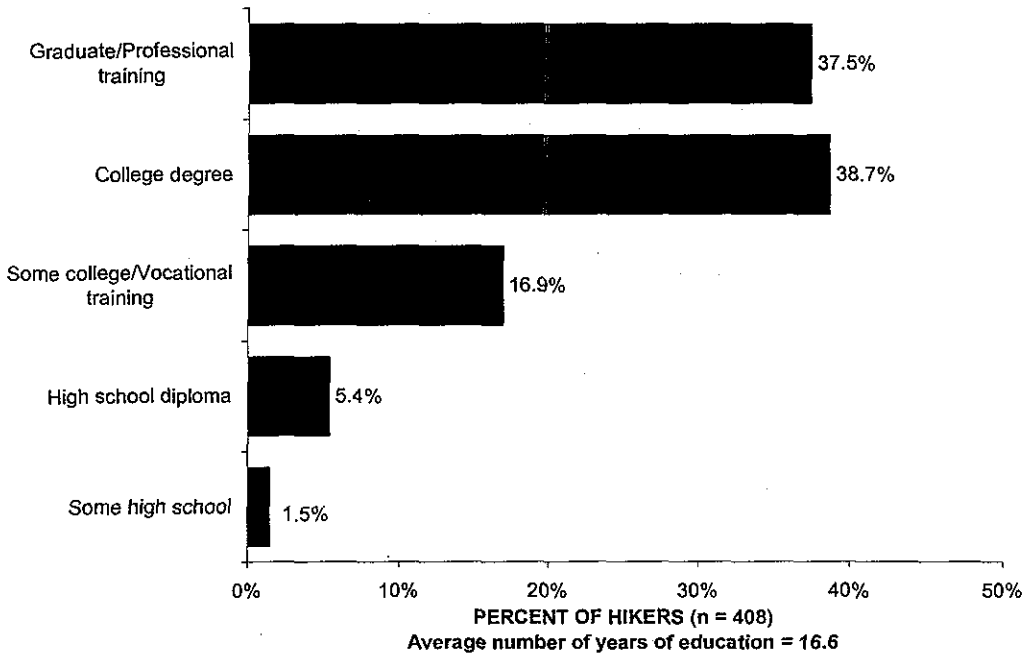
Mail Survey

33. What is the highest level of formal schooling you have completed?
(Circle the appropriate number.)

YEARS

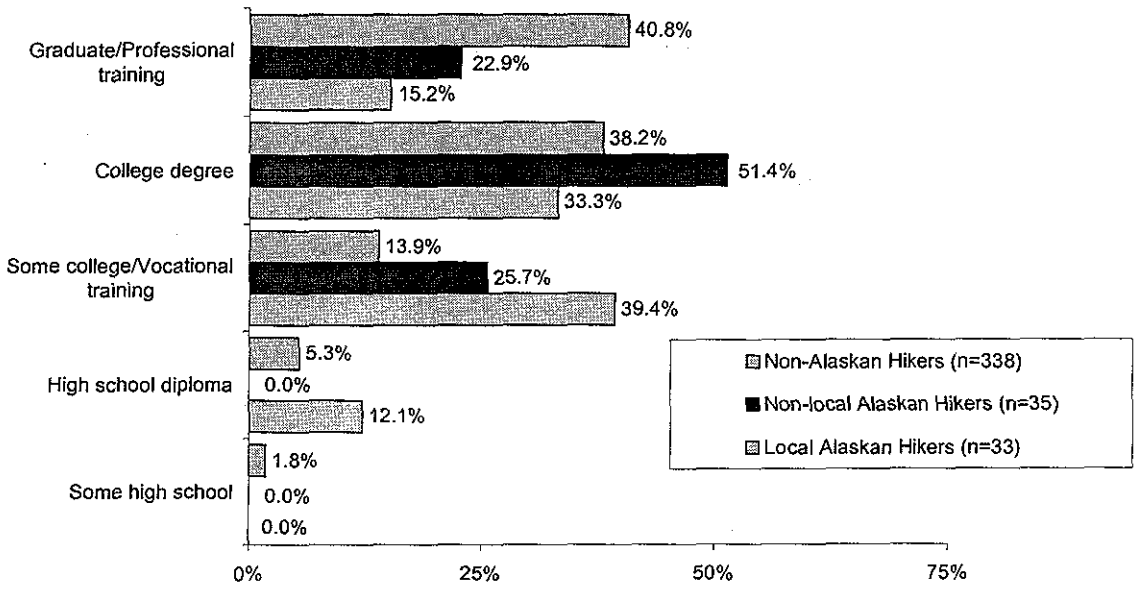
1 2 3 4 5 6 7 8 9 10 11 12 (Elementary thru High School)
13 14 15 16 (College/Vocational)
17 18 19 20 21 22 23 24+ (Graduate/Professional)

FIGURE 2.7: Mail Survey, Q-33
HIGHEST LEVEL OF FORMAL EDUCATION COMPLETED



Hikers' highest level of education differed by residence, $F(2, 403) = 4.72$, $p = .009$. Post hoc Tukey tests revealed that non-Alaskan hikers ($M = 16.7$) had significantly more education than local Alaskan hikers ($M = 15.3$), $p = .008$, but not significantly more education than non-local Alaskan hikers ($M = 16.2$), $p = .545$. The difference in education level for local and non-local Alaskan hikers was not significant, $p = .309$

FIGURE 2.8: Mail Survey Q-33
HIGHEST LEVEL OF FORMAL SCHOOLING BY RESIDENCE



PERCENT OF HIKERS (n = 406)
Average level of school: Non-Alaskan = 16.7, Non-local Alaskan = 16.2, Local Alaskan = 15.3

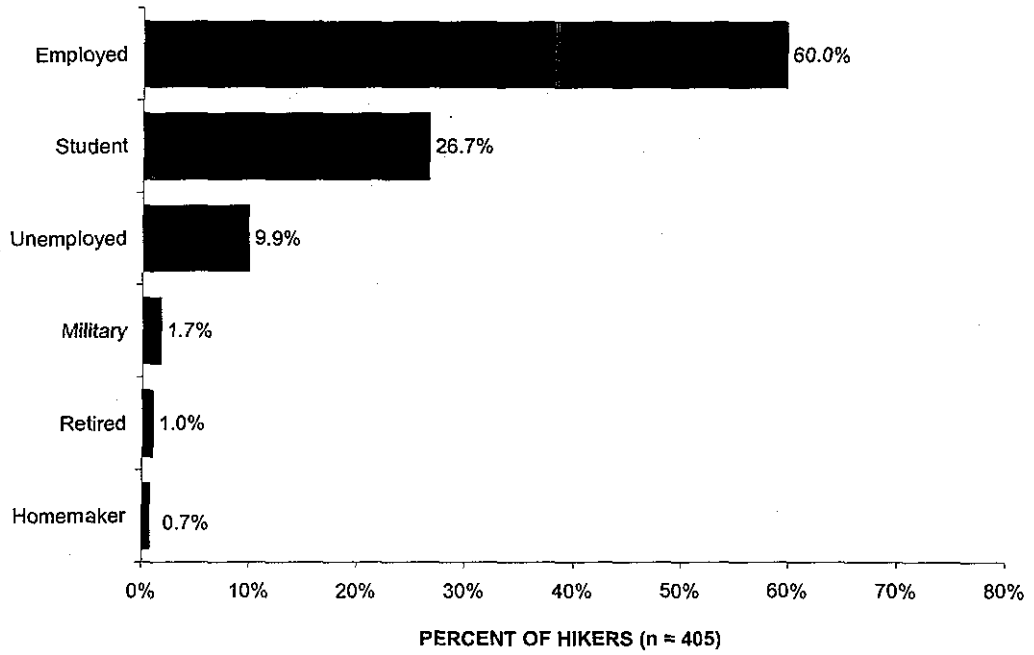
Occupation

Mail Survey

34. Which of the following best describes your current employment status? *(Circle the appropriate number.)*

1 STUDENT
2 HOMEMAKER
3 RETIRED
4 MILITARY
5 EMPLOYED
6 UNEMPLOYED

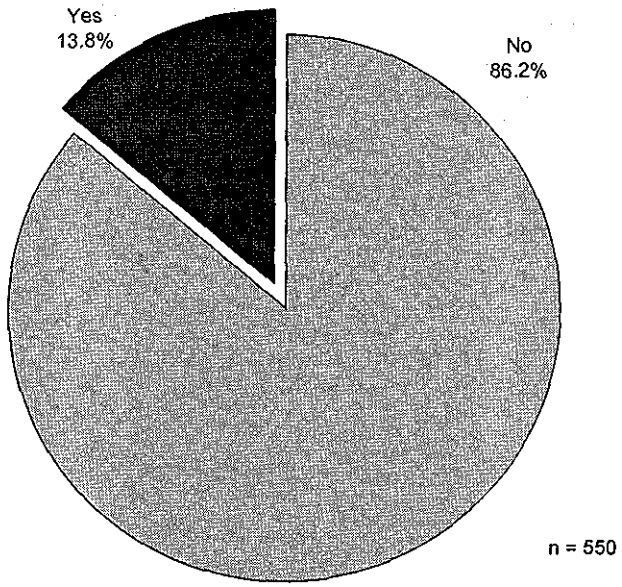
FIGURE 2.9: Mail Survey, Q-34
EMPLOYMENT STATUS OF DENA OVERNIGHT BACKCOUNTRY HIKERS



Pre-trip Interview

Are you a summer employee? 1. Yes 2. No

FIGURE 2.10: Pre-trip Interview
PERCENTAGE OF RESPONDENTS SELECTED TO REPRESENT HIKING PARTIES THAT WERE LOCAL SUMMER EMPLOYEES



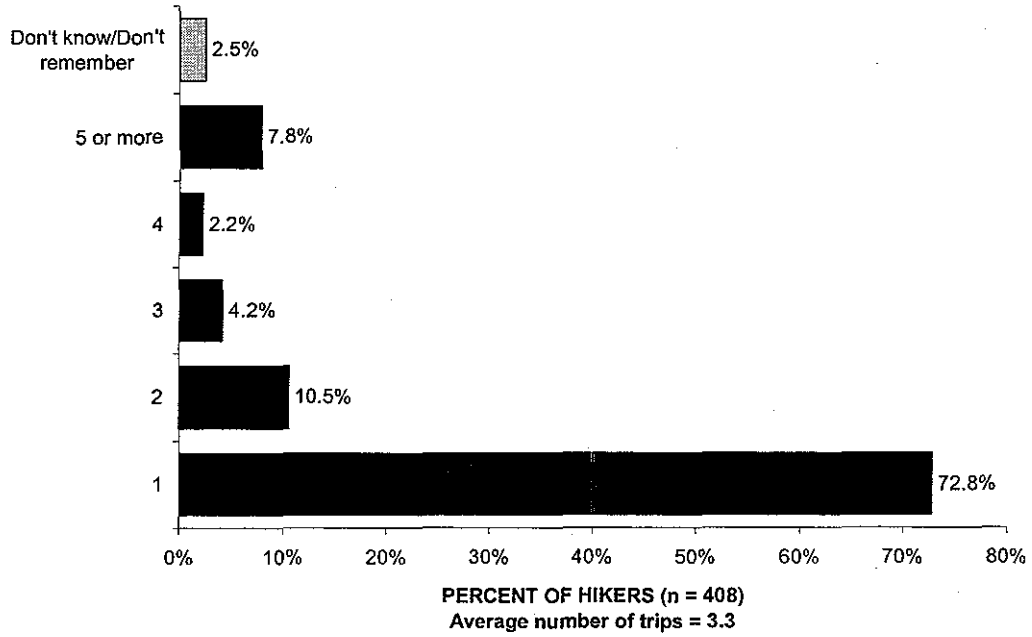
Note: All hiking parties indicating that they were local summer employees were classified as local Alaskan residents. There were however some local Alaskan hiking parties that were not local summer employees. The chart above indicates the percentage of hiking parties that were local summer employees. Figure 2.1 indicates the percentage of all hikers that were local Alaskan residents.

Number of Visits to DENA

Mail Survey

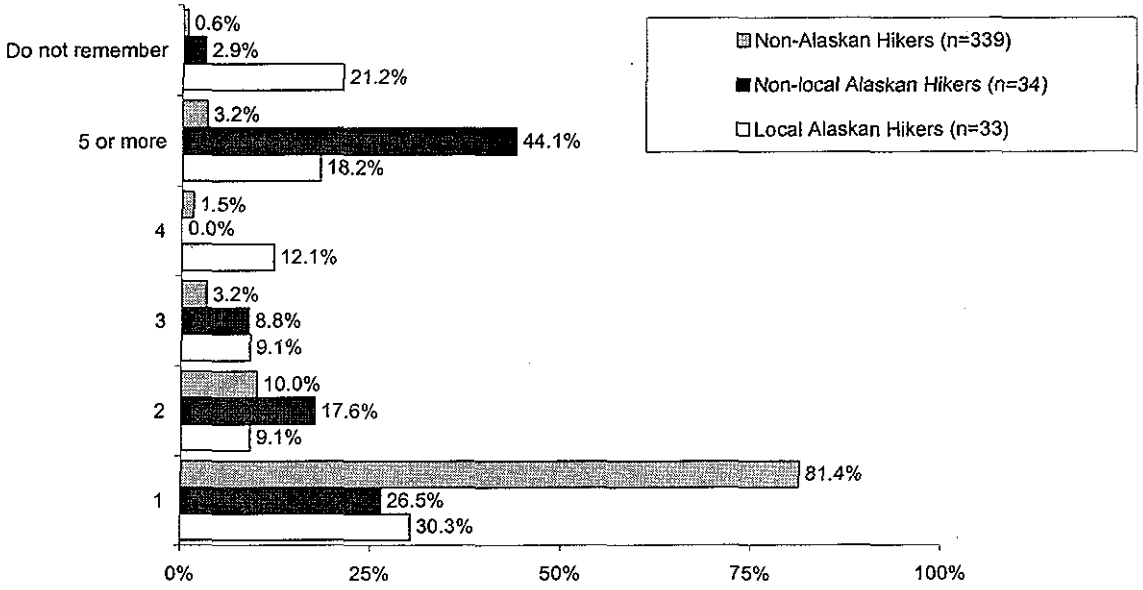
2.	**Including this visit,** how many visits have you made to Denali National Park? (**Please** enter a question mark "?" if you don't remember.) NUMBER OF VISITS _____

FIGURE 2.11: Mail Survey, Q-2
NUMBER OF TRIPS TO DENA IN THE PAST 3 YEARS INCLUDING CURRENT TRIP



Number of trips to DENA in the past three years differed significantly by hikers' residence, $F(2, 393) = 33.05$, $p < .001$. Post hoc Tukey tests revealed that non-Alaskan hikers have taken significantly fewer trips to DENA in the past three years than either local Alaskan hikers ($M = 11.4$), $p < .001$, or non-local Alaskan hikers ($M = 15.4$), $p < .001$. The number of trips to DENA in the past three years for non-local and local Alaskan residents did not differ significantly, $p = .336$. As can be seen in Figure 2.12, for 81.4 percent of non-Alaskan hikers the current trip was their first visit to DENA compared to 25 percent to 30 percent of Alaskan hikers.

FIGURE 2.12: Mail Survey, Q-2
NUMBER OF TRIPS TO DENA IN THE PAST 3 YEARS INCLUDING CURRENT TRIP BY RESIDENCE



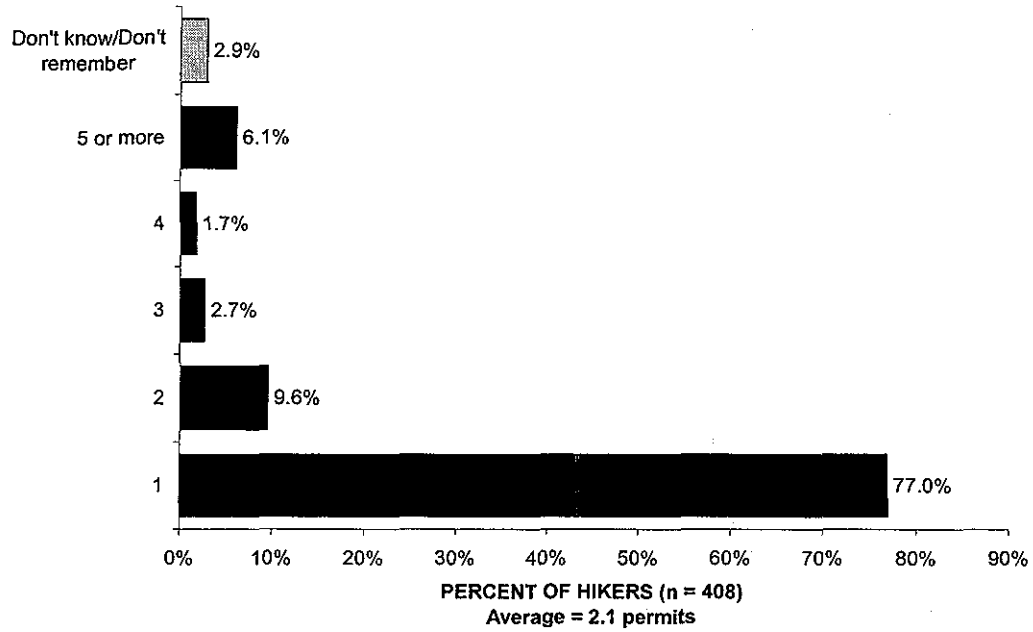
Average number of trips: Non-Alaskan = 1.5, Non-local Alaskan = 15.4, Local Alaskan = 11.4

Number of DENA Backcountry Travel Permits Issued to Hikers During Their Lifetime

Mail Survey

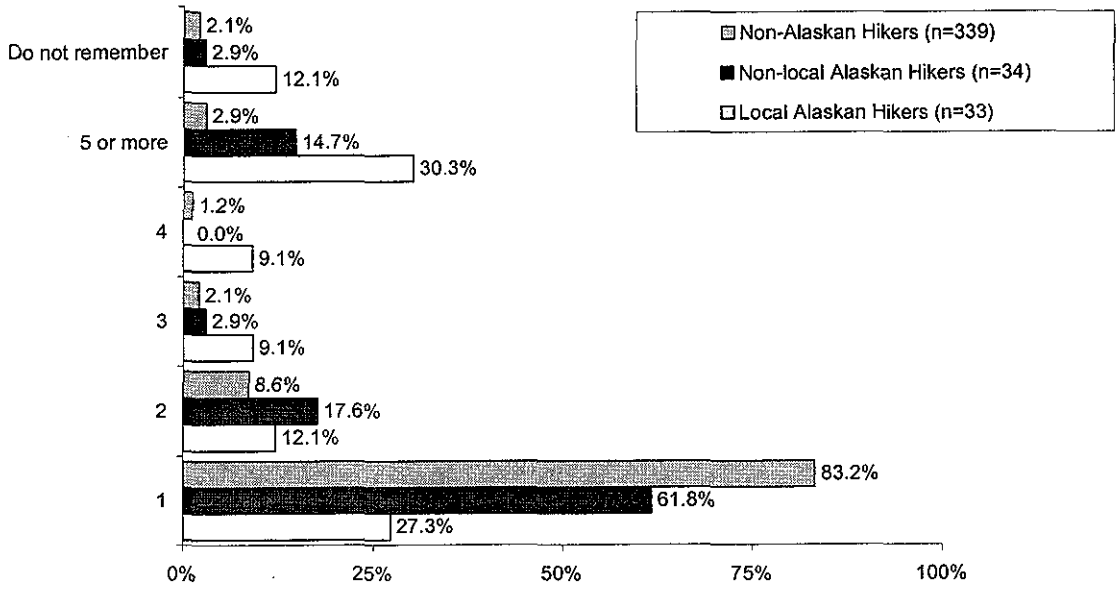
3.	**Including this visit**, how many backcountry travel permits have you been issued for backpacking trips at Denali? *(Please enter a question mark "?" if you don't remember.)* NUMBER OF VISITS _____

FIGURE 2.13: Mail Survey, Q-3
NUMBER OF BACKCOUNTRY PERMITS ISSUED TO HIKERS DURING THEIR LIFETIME



The number of backcountry permits issued to a respondent during their lifetime varied significantly by hikers' residence, $F(2, 391) = 25.29$, $p < .001$. Post hoc Tukey tests revealed that non-Alaskan hikers ($M = 1.3$) have been issued significantly fewer permits than local Alaskan hikers ($M = 7.8$), $p < .001$, or non-local Alaskan hikers ($M = 5.5$), $p < .001$. The difference in the number of permits issued for local and non-local Alaskan hikers was not significant, $p = .214$.

FIGURE 2.14: Mail Survey, Q-3
NUMBER OF BACKCOUNTRY PERMITS ISSUED TO HIKERS DURING LIFETIME BY RESIDENCE



PERCENT OF HIKERS (n = 406)

Average number of permits: Non-Alaskan = 1.3, Non-local Alaskan = 5.4, Local Alaskan = 7.8

III. Trip Characteristics

Jane E. Swanson, Mark E. Vande Kamp, & Darryll R. Johnson
Cascadia Field Station, USGS/BRD/FRESC
University of Washington

Denali backpacker survey respondents were asked a variety of questions that asked respondents about their trip to Denali. All of these questions were asked in the mail questionnaire, and therefore these data represent responses for all hikers. This section reports the data that were collected with these questions. It is organized in the chronological order of most trips, moving from trip planning to a description of the trip. Each question is presented as it appeared on the questionnaire and is followed by the corresponding graphs, tables, or analyses.

Highlights

- For each question reported in this section local-Alaskans' responses differed from the non-local Alaskans' and non-Alaskans' responses. Examination of the findings suggests that many local-Alaskans who were spending the summer working at Denali defined their trip as their summer stay in the DENA area resulting in trips with distinctly different trip characteristics than the other two groups. For example, the average number of nights spent in DENA and the surrounding community was 49.41 nights. The findings summarized below do not address local-Alaskans' responses (although the referenced charts include the data for local-Alaskans).

- The majority of hikers (93.9% of non-local Alaskans and 81.1% of non-Alaskans) first decided to take a backcountry trip in DENA prior to leaving home for the trip during which we contacted them (see Figure 3.2).

- Non-Alaskan and non-local Alaskan hikers were most likely to spend between two and four nights in DENA and the surrounding community (see Figure 3.4). Most non-Alaskan and non-local Alaskan hikers however spent fewer nights in the backcountry with about one-third spending one night and an additional fourth spending two nights (see Figure 3.6).

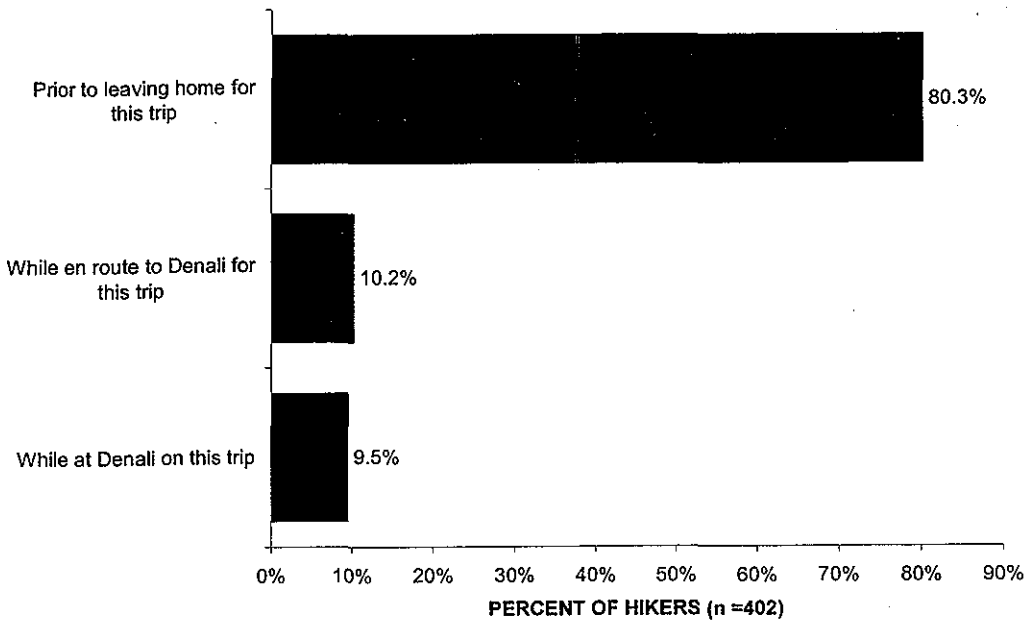
- Almost half of non-Alaskan and non-local Alaskan overnight backcountry hikers did not take any day hikes in DENA that were separate from their backcountry trip (see Figure 3.8). About 30 percent of hikers took one or two day hikes in the backcountry. Slightly more than 10 percent of hikers took more than three day hikes in the backcountry.

When Hikers First Decided to Take a Backcountry Trip in Denali

1. When did you first decide to take an overnight backcountry trip in Denali? *(Please circle the appropriate number.)*

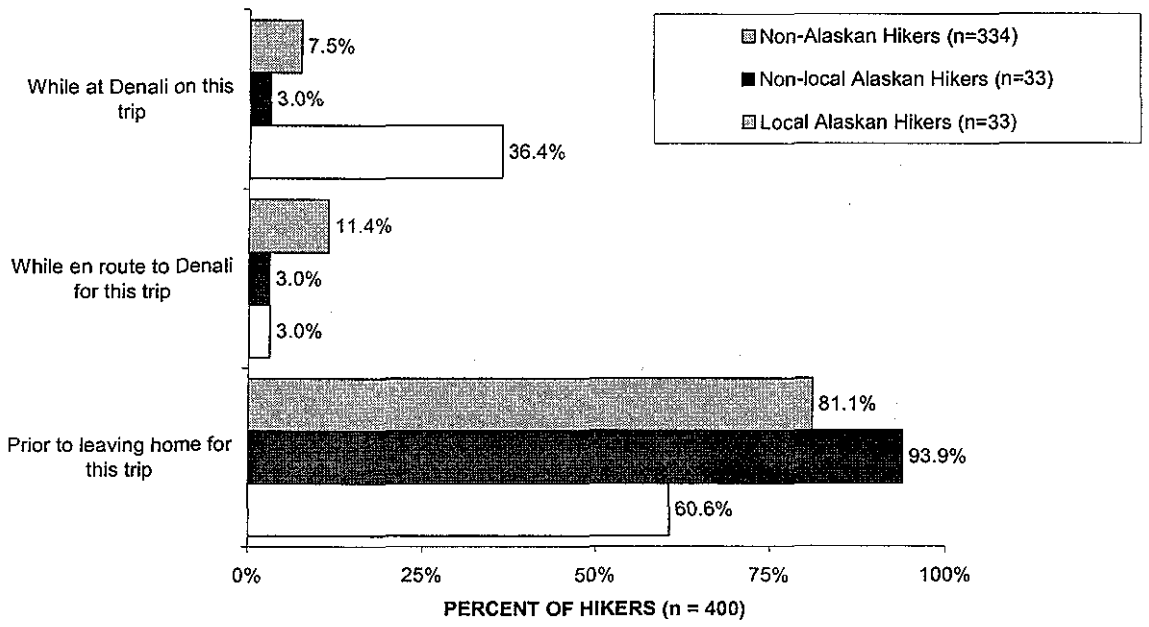
   1 PRIOR TO LEAVING HOME FOR THIS TRIP
   2 WHILE EN ROUTE TO DENALI FOR THIS TRIP
   3 WHILE AT DENALI ON THIS TRIP

FIGURE 3.1: Mail Survey, Q-1
WHEN HIKERS FIRST DECIDED TO TAKE A BACKCOUNTRY TRIP



When hikers decided to take a backcountry trip in Denali depended on hikers' residence, χ^2 (2, n = 400) = 12.20, p = .002 (prior to leaving home vs. after leaving home). As can be seen in Figure 3.2, local Alaskan hikers (compared to non-local Alaskan hikers or non-Alaskan hikers) were more likely to decide to take a backcountry trip while at Denali on this trip (36.4% vs. 7.5% or 3.0%). Non-local Alaskan and non-Alaskan hikers were more likely to decide to visit Denali prior to leaving home for this trip (93.9% and 81.1% compared to 60.6%). The greater number of non-local Alaskan hikers planning this trip prior to leaving home compared to non-Alaskan hikers may reflect that their backcountry trip to Denali was the primary purpose of their trip.

FIGURE 3.2: Mail Survey, Q-1
WHEN HIKERS FIRST DECIDED TO TAKE A BACKCOUNTRY TRIP BY RESIDENCE



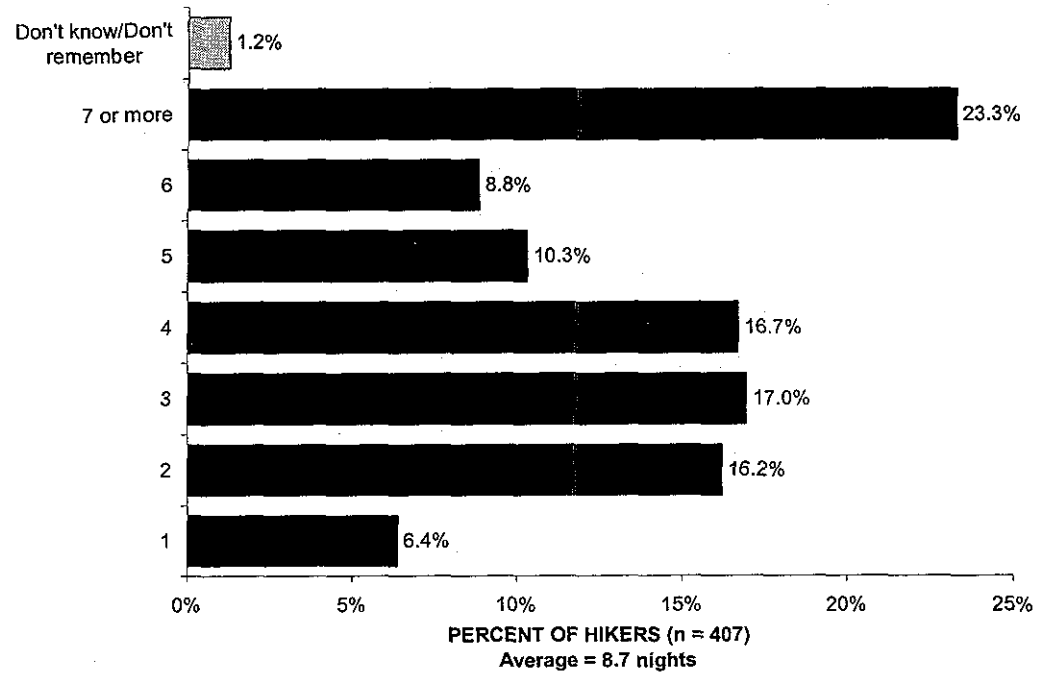
Total Nights Spent at DENA and Camped in the Backcountry

4. How many total **nights** did you (will you) spend in the Park and surrounding community (including overnight backcountry trips) during **this visit** to Denali?

NIGHTS AT DENALI: _____ → Of this total number of nights in the area, how many were (will be) spent camped in the backcountry?

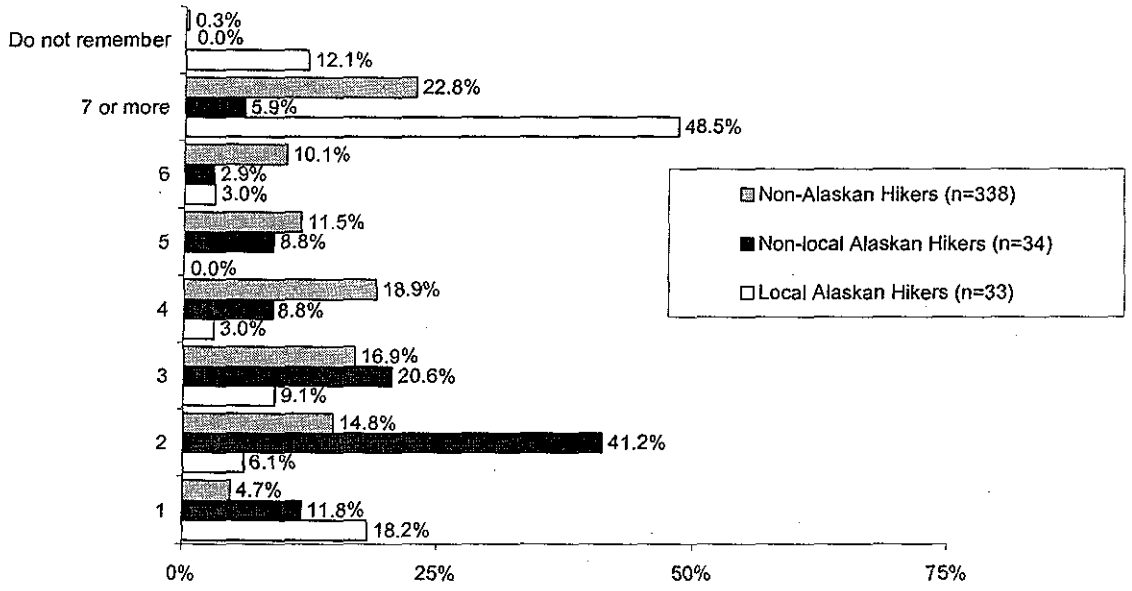
NIGHTS IN BACKCOUNTRY: _____

FIGURE 3.3: Mail Survey, Q-4a
TOTAL NUMBER OF NIGHTS SPENT IN THE PARK AND SURROUNDING AREA



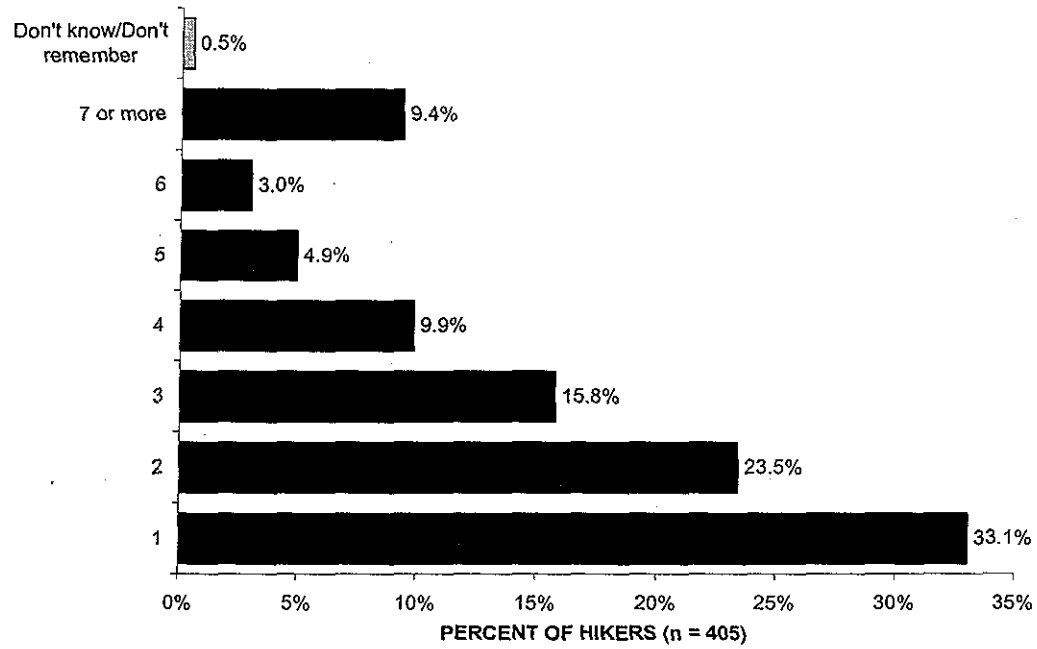
Number of nights spent at DENA and the surrounding area varied significantly by residence, $F(2, 397) = 108.09$, $p < .001$. Post hoc Tukey tests revealed that, on average, local Alaskan hikers spent significantly more nights at DENA and the surrounding area ($M = 49.41$) than non-local Alaskan hikers ($M = 3.06$), $p < .001$, or non-Alaskan hikers ($M = 5.81$), $p < .001$. The difference in number of nights spent at DENA and the surrounding area for non-local Alaskan hikers and non-Alaskan hikers was not significant, $p = .586$. Recall that many of the local Alaskan hikers are people who come to the area to work for the summer. Review of the data suggests that some hikers considered their entire summer stay as a single trip and therefore, responded to this question with the length of their summer stay (which was over 3 months for some individuals). These responses were primarily responsible for the high average number of days spent in DENA and surrounding area for this group. Eliminating hikers who answered 90 or more days when computing the average, resulted in an adjusted average of 5.66 nights spent in the park and surrounding area.

FIGURE 3.4: Mail Survey, Q-4
NUMBER OF NIGHTS SPENT IN PARK AND SURROUNDING COMMUNITY BY RESIDENCE



Average number of nights: Non-Alaskan = 5.8, Non-local Alaskan = 3.1, Local Alaskan = 49.4

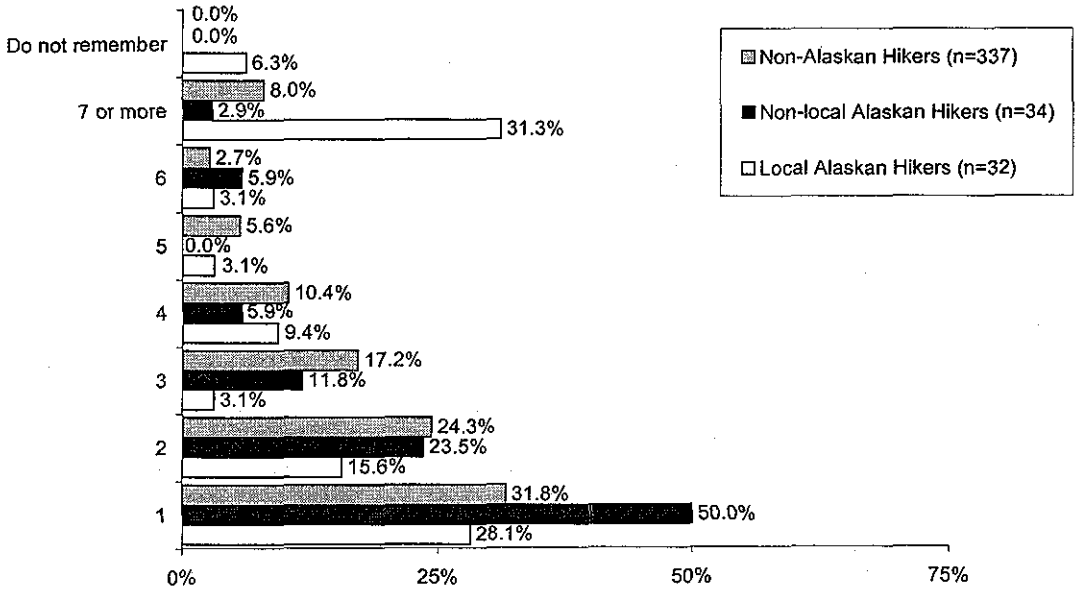
FIGURE 3.5: Mail Survey, Q-4b
TOTAL NUMBER OF NIGHTS SPENT IN THE DENA BACKCOUNTRY



Average = 3.2 nights

The number of nights hikers spent in the Denali backcountry varied significantly by residence, $F(2, 398) = 17.70$, $p < .001$. Post hoc Tukey tests revealed that, on average, local Alaskan hikers spent more nights camped in the Denali backcountry ($M = 6.60$) than non-local Alaskan hikers ($M = 2.15$), $p < .001$, or non-Alaskan hikers ($M = 3.03$), $p < .001$. The difference in the number of nights spent camped in the Denali backcountry did not differ for non-local Alaskan hikers and non-Alaskan hikers, $p = .304$. As can be seen in Figure 3.6, 31.3 percent of local Alaskan hikers spent 7 or more nights camped in the backcountry compared to less than 10 percent for non-local Alaskan or non-Alaskan hikers.

FIGURE 3.6: Mail Survey, Q-4
NUMBER OF NIGHTS CAMPED IN DENA BACKCOUNTRY BY RESIDENCE



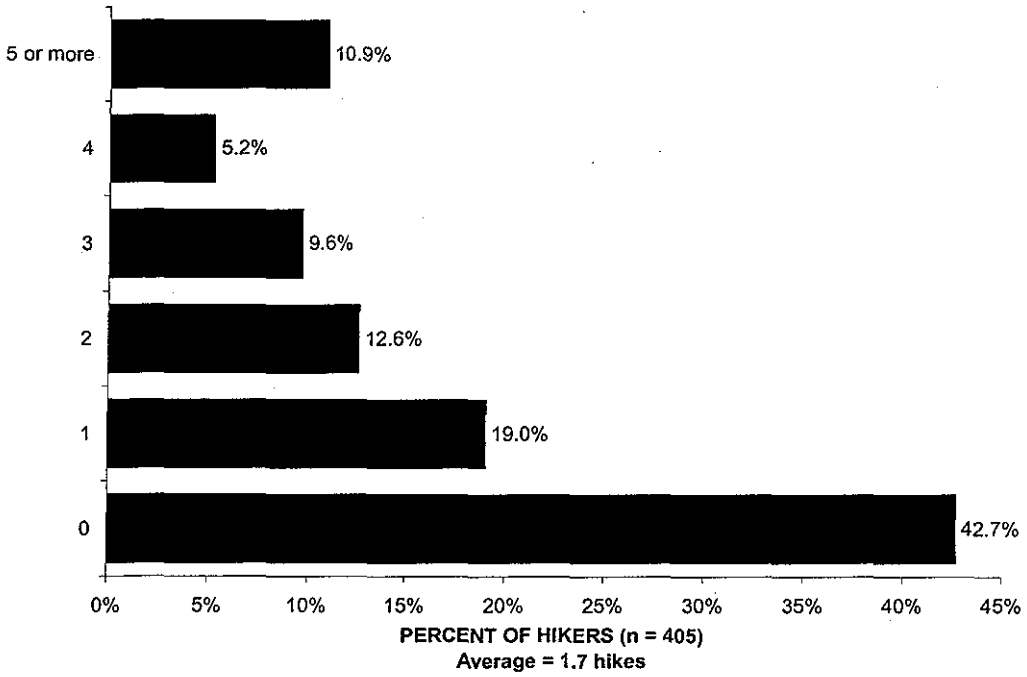
Average number of nights: Non-Alaskan = 3.0, Non-local Alaskan = 2.2, Local Alaskan = 6.6

Number of Backcountry Day Hikes in DENA Taken During Trip

5. How many **backcountry day hikes** (hikes outside the immediate vicinity of developed facilities that were not on developed trails and not part of an overnight backcountry trip) did you take during **this visit** to Denali? *(Please circle the appropriate number. Include future day hikes if you haven't finished your current visit.)*

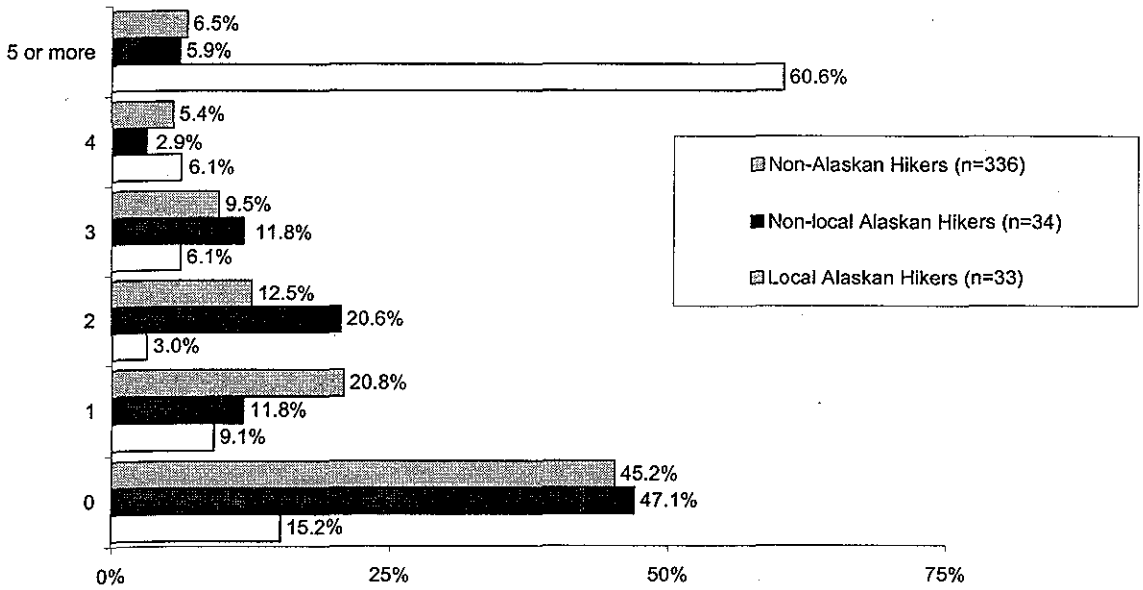
0 1 2 3 4 5 6 7 8 9 10+

FIGURE 3.7: Mail Survey, Q-5
NUMBER OF BACKCOUNTRY HIKES IN DENA DURING THIS TRIP



Number of backcountry day hikes taken during this trip varied by residence, $F(2, 400) = 63.99$, $p < .001$. Post hoc Tukey tests revealed that local Alaskan hikers on average took more backcountry day hikes during their trip ($M = 5.58$) than non-local Alaskan hikers ($M = 1.41$), $p < .001$, or non-Alaskan hikers ($M = 1.36$), $p < .001$. There was no significant difference in the number of backcountry day hikes that non-local Alaskan and non-Alaskan hikers took, $p = .988$. As can be seen in Figure 3.8, approximately 45 percent of non-local Alaskan and non-Alaskan hikers took one backcountry day hike compared to 15.2 percent of local Alaskan hikers. Additionally, 60.3 percent of local Alaskan hikers took seven or more day hikes while only about 6 percent of non-local Alaskan and non-Alaskan hikers took seven or more day hikes.

FIGURE 3.8: Mail Survey, Q-5
NUMBER OF BACKCOUNTRY DAY HIKES IN DENA BY RESIDENCE



PERCENT OF HIKERS (n = 403)

Average number of hikes: Non-Alaskan = 1.4, Non-local Alaskan = 1.4, Local Alaskan = 5.6